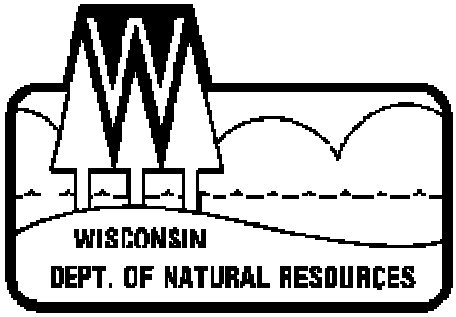
| Case Study | **Hillshire Farm & Kahn's**<br><br>**Eliminating the Use of Freon and Solvents** |
|---|---|
| ***Standard Industrial Classification (SIC)*** | Meat processing/2013 |
| ***Type of Waste*** | Freon 113 (1,1,2 - tri-chloro-1,2,2 - trifluoroethane) and parts washing solution |
| ***Strategy*** | Material substitution and process modification |
| ***Company Background*** | Hillshire Farm & Kahn's (HF&K) operates several facilities across the United States. In Wisconsin, its in New London facility employs approximately 1,200 people. HF&K processes raw meat into meat products (i.e., sausage, bacon, ham and lunch meats). |
| ***Original Process*** | Freon 113 was used to dissolve the fat in meats in a diagnostic test to determine the fat/lean content of meats. A solvent-based parts washing solution was used in the maintenance area. |
| ***Motivation*** | HF&K's motivation was to reduce waste disposal costs, long term disposal liability, and its regulatory burden |
| ***Pollution Prevention Process*** | HF&K invested in a new infrared technology for application in determining the fat/lean content of meats. The company also purchased parts washing equipment with a filtration system and converted to a non-hazardous (citrene-based) cleaning solution for the equipment. |
| ***Material/Energy Balance*** | ***Original Process***<br><br>**Feedstock**<br><br>1. Freon TF<br>2. solvent-based solution for parts washing<br><br>**Waste**<br><br>1. hazardous waste and Volatile Organic Compound (VOC) air emissions<br>2. hazardous waste<br><br>**Disposal**<br><br>1. solvent reclamation/fuel blending<br>2. solvent reclamation/fuel blending<br><br>***Pollution Prevention Process***<br><br>**Feedstock** |

| | |
|---|---|
| | 1. new infrared technology<br>2. non-hazardous cleaning solution<br><br>**Waste**<br><br>1. none<br>2. non-hazardous oil waste<br><br>**Disposal**<br><br>1. none<br>2. waste-oil recycling |
| ***Economics*** | **Capital Costs**<br>HF&K purchased infrared technology equipment and a parts washer.<br><br>**Operation/Maintenance Costs**<br>The new infrared technology costs $1,000/year for light bulb replacement. The parts washer costs approximately $1,200/year for purchase of the non-hazardous cleaning solution and filters.<br><br>**Payback Period**<br>Capital costs for the infrared technology were recovered in two years. The costs for the parts washer were recovered in less than one year. |
| ***Benefits*** | Benefits include: cost savings, improved employee safety, less regulatory burden and benefits to the environment. |
| ***Obstacles*** | Obstacles include: employee resistance, monitoring test quality and dependability. |
| ***Technology Transfer*** | The technologies applied at Hillshire Farms are commercially available and could be applied in similar situations. |
| ***Other Pollution Prevention Activities*** | The company has adopted several strategies to reduce its solid waste. The following is a description of these activities. HF&K eliminated open burning of non-reusable pallets by contracting with a pallet supplier who uses the pallets for repair and boiler fuel. A shredder and baler were purchased to initiate corrugated cardboard recycling which reduced landfill waste by nearly 50 percent. This resulted in savings of $70,000 in the first year with equipment costs being recovered in less than one year. HF&K also eliminated nine tons of waste to landfill per month by working with a mill willing to accept Hillshire's label backing which is difficult to recycle. The company also developed two programs to extend the usable brine life in meat cooling processes from 24 hours to 168 hours. This eliminated approximately 5,500 pounds of sodium chloride discharges per week. |
| ***Company Address*** | Hillshire Farm<br>P.O. Box 227<br>New London, Wisconsin 54961 |
| ***Contact Person*** | Greg Ehrle |

| | |
|---|---|
| | 414/982-2611 |
| ***Pollution Prevention Resources*** | **Free, On-site Technical Assistance**<br>University of Wisconsin Extension<br>Solid and Hazardous Waste Education Center<br>Milwaukee area: 414/475-2845<br>Remainder of state: 608/262-0385<br><br>**Pollution Prevention Information Clearinghouse**<br>Wisconsin Department of Natural Resources<br>Cooperative Environmental Assistance<br>608/267-9700 or e-mail: cea@dnr.state.wi.us |




**Bureau of Cooperative Environmental Assistance**
**Wisconsin Department of Natural Resources**
**P.O. Box 7921**
**Madison, WI 53707**
**608/267-9700**

PUBL-TS-039 95